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**west virginia department of environmental protection**

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**ENGINEERING EVALUATION / FACT SHEET**

**BACKGROUND INFORMATION**

Application No.: G10-D131C  
Plant ID No.: 045-00131  
Applicant: Greenbrier Minerals, LLC  
Facility Name: Lower War Eagle Facility  
Location: Cyclone, Wyoming County, WV  
SIC Code: 1222 (Bituminous Coal & Lignite - Underground)  
1221 (Bituminous Coal & Lignite - Surface)  
NAICS Code: 212112 (Bituminous Coal Underground Mining)  
212111 (Bituminous Coal and Lignite Surface Mining)  
Application Type: Modification  
Received Date: October 7, 2016  
Engineer Assigned: Dan Roberts  
Fee Amount: \$500  
Date Received: October 12, 2016  
Applicant's Ad Date: October 20, 2016  
Newspaper: *Logan Banner*  
Complete Date: November 2, 2016  
UTM's: Easting: 435.8958 km Northing: 4176.3958 km NAD83 Zone 17N  
Lat/Lon Coordinates: Latitude: 37.732597 Longitude: -81.727500 NAD83  
Description: Modification to add truck dump bin BS-01, breaker CR-01 and two belt conveyors BC-09 and BC-10 that will tie into the existing belt conveyor system at BC-06. Trucking of 500 TPH and 4,380,000 TPY of surface mine raw coal over an unpaved haulroad will also be added.

**BACKGROUND**

Greenbrier Minerals, LLC has proposed to modify their currently permitted coal preparation plant located near Cyclone, Wyoming County, WV. Their current General Permit G10-D131B was approved on October 5, 2015.

This facility was previously owned and operated by Cliffs Logan County Coal, LLC. As of January 1, 2015, the ownership of the Lower War Eagle Facility was transferred to Greenbrier Minerals, LLC.

File research indicates that the Lower War Eagle Facility feeds an underground conveying system which emerges and feeds Greenbrier Minerals, LLC's Saunders Preparation Plant (045-00131, G10-D103F). Greenbrier Minerals, LLC's coal handling facility (Lower War Eagle Facility: 109-00198, G10-D131B) and wet wash coal preparation plant (Saunders Preparation Plant: 045-00131, G10-D103F) meet the definition of "Building, Structure, Facility, or Installation" in 45CSR14.2.10 and "Major Source" in 45CSR30.2.26 and shall be considered as one facility for determining applicability to 45CSR14 (PSD) and 45CSR30 (Title V). Therefore, Greenbrier Minerals, LLC's proposed modifications and their existing operations shall be combined when determining applicability and share the common facility ID Number of 045-00131.

As discussed with and recommended by Bev McKeone, NSR Program Manager, on September 21, 2015, the facility ID No. for the Lower War Eagle Facility will be changed from 109-00198 to 045-00131 even though the facility actually lies just past the Logan County line inside of Wyoming County. The Lower War Eagle facility has approximately 1 mile of underground belt conveyors and then they merge onto the Powellton Deep Mine conveyors through a flop gate. The Powellton Deep Mine conveyors extend for approximately 4-5 miles and are fed by underground mining operations that produce coal during the week days and transfer it to the Saunders Preparation Plant. On the weekends, the flop gate is shifted and the from the Lower War Eagle Facility is transferred to the Saunders Preparation Plant. The flop gate prevents coal from being transferred from the Lower War Eagle Facility and the Powellton deep mine at the same time.

This application proposes to add truck dump bin BS-01, breaker CR-01 and two belt conveyors BC-09 and BC-10 that will tie into the existing belt conveyor system at BC-06. Trucking of 500 TPH and 4,380,000 TPY of surface mine raw coal over an unpaved haulroad will also be added.

## DESCRIPTION OF PROCESS

The Lower War Eagle Facility is located in an urban area near Cyclone in Wyoming County, WV.

Run of the mine raw coal will transfer to belt conveyor BC-01 (PE) @ TP-01 (TC-FE); be fed to a double deck 1000TPH screen SS-01 (FW) @ TP-02 (TC-FW); and discharge to belt conveyor BC-02 (PE) @ TP-03 (TC-FE) for delivery to open stockpile OS-01 (SW-WS) @ TP-04 (TC-PE). A stacking tube will control the load-in process. The raw coal material will then be reclaimed underpile to belt BC-03 (PE) @ TP-05 (LO-UC) and transferred through a series of partially-enclosed belt conveyors BC-04 (PE) thru BC-08 (PE) @ TP-06 (TC-FE) thru TP-11 (TC-FE) to an underground deep mine belt system. A dozer will be used to truncate the stockpile and by doing so will enlarge the stockpile area.

An endloader will transfer coal from open storage pile OS-1 to trucks @ TP-12 (LO-MDH)

to be hauled away from the facility over a 0.25 mile round trip paved haulroad.

Raw coal will be delivered by truck to truck dump bin BS-01 @ TP-13(UD-PW); transfer to breaker CR-01(FW) @ TP-14(TC-FE); discharge to belt conveyor BC-09(PE) @ TP-15(TC-FW); transfer to belt conveyor BC-10(PE) @ TP-16(TC-FE) and then transfer to existing belt conveyor BC-06 @ TP-17(TC-FE).

There are no VOC's or HAP's associated with this facility.

The facility shall be modified and operated in accordance with the following equipment and control device information taken from permit applications G10-D131C, G10-D131B, G10-D131A and G10-D131 and any amendments thereto:

Equipment ID #	Date of Construction, Reconstruction or Modification <sup>1</sup>	G10-D Applicable Sections <sup>2</sup>	Emission Unit Description	Design Capacity		Control Device <sup>3</sup>	Associated Transfer Points		
				TPH	TPY		Location: B -Before A -After	ID. No.	Control Device <sup>3</sup>
Trucked Surface Mine Raw Coal Circuit									
BS-01	C 2016	5 and 8	Truck Dump Bin - 150 tons capacity - receives surfaced mined raw coal from trucks and feeds it into CR-01	500	4,380,000	PE	B A	TP-13 TP-14	UD-PW TC-FE
CR-01	C 2016	5 and 8	Breaker - receives raw coal from BS-01, crushes it to 6"x0 and drops it onto BC-10	500	4,380,000	FW	B A	TP-14 TP-15	TC-FE TC-FW
BC-09	C 2011	5 and 8	Belt Conveyor - receives sized raw coal (6"x0) from CR-01 and transfers it to BC-10	500	4,380,000	PE	B A	TP-15 TP-16	TC-FW TC-FE
BC-10	C 2011	5 and 8	Belt Conveyor - receives sized raw coal (6"x0) from BC-09 and transfers it to BC-10	500	4,380,000	PE	B A	TP-16 TP-17	TC-FE TC-FE
Deep Mined Raw Coal Circuit									
BC-01	C 2011	5 and 8	Belt Conveyor - receives raw coal (6"x0) from the deep mine and transfers it to BC-02	1,000	8,760,000	PE	B A	TP-01 TP-03	TC-FE TC-FE
BC-02	C 2011	5 and 8	Belt Conveyor - transfers raw coal (4"x0) from BC-01 to open stockpile OS-01 via stacking tube	1,000	8,760,000	PE	B A	TP-03 TP-04	TC-FE TC-PE
OS-01	M 2015 C 2011	5 and 8	Raw Coal Stockpile with a stacking tube - maximum 85,000 tons capacity, 188,869 ft² base area and 75' height - receives deep mine raw coal (4"x0) from BC-02 and underpile reclaim feeders drop to BC-03 or a front end-loader transfer it to truck for shipment	----	8,760,000	WS	B A A	TP-04 TP-05 TP-12	TC-PE LO-UC LO-MDH
BC-03	C 2011	5 and 8	Belt Conveyor - transfers deep mine raw coal (4"x0) from open stockpile OS-01 to belt conveyor BC-04	1,000	8,760,000	PE	B A	TP-05 TP-06	TC-FE TC-FE
BC-04	C 2011	5 and 8	Belt Conveyor - transfers deep mine raw coal (4"x0) from BC-03 to belt conveyor BC-05	1,000	8,760,000	PE	B A	TP-06 TP-07	TC-FE TC-FE
BC-05	C 2011	5 and 8	Belt Conveyor - transfers deep mine raw coal (4"x0) from BC-04 to belt conveyor BC-06	1,000	8,760,000	PE	B A	TP-07 TP-08	TC-FE TC-FE
BC-06	C 2011	5 and 8	Belt Conveyor - transfers deep mine raw coal (4"x0) from BC-05 and sized surface mine coal (6"x0) to belt conveyor BC-07	1,000	8,760,000	PE	B A	TP-08 TP-09	TC-FE TC-FE
BC-07	C 2011	5 and 8	Belt Conveyor - transfers deep mine raw coal (4"x0) from BC-06 and sized surface mine coal (6"x0) to belt conveyor BC-08	1,000	8,760,000	PE	B A	TP-09 TP-10	TC-FE TC-FE
BC-08	C 2011	5 and 8	Belt Conveyor - transfers deep mine raw coal (4"x0) from BC-07 and sized surface mine coal (6"x0) to an underground deep mine belt system for the Saunders Preparation Plant (G10-D103F) located in Logan County.	1,000	8,760,000	PE	B A	TP-10 TP-11	TC-FE TC-FE

- <sup>1</sup> In accordance with 40 CFR 60 Subpart Y, coal processing and conveying equipment, coal storage systems, and coal transfer and loading systems constructed, reconstructed, or modified after April 28, 2008 shall not discharge gases which exhibit 10 percent opacity or greater. For open storage piles constructed, reconstructed, or modified after May 27, 2009, the permittee shall prepare and operate in accordance with a fugitive coal dust emissions control plan that is appropriate for site conditions.
- <sup>2</sup> All registered affected facilities under Class II General Permit G10-D are subject to Sections 1.0, 1.1, 2.0, 3.0 and 4.0.
- <sup>3</sup> Control Device Abbreviations: FE - Full Enclosure; FW - Full Enclosure with Water Sprays; PE - Partial Enclosure; PW - Partial Enclosure with Water Sprays; WS - Water Sprays; and N - None.

## DESCRIPTION OF FUGITIVE EMISSIONS

Potential sources of fugitive particulate emissions for this facility include emissions, which are not captured by pollution control equipment and emissions from open stockpiles and vehicular traffic on paved/unpaved haulroads and work areas. The haulroads and work areas will be controlled by water truck in accordance with section E.6.c.i. of the General Permit.

An additive to prevent freezing will be utilized in the winter months when freezing conditions are present. New course rock base material will be added to unpaved access roads as needed.

## SITE INSPECTION

On August 13, 2015, Andy Grimm of the DAQ's Compliance and Enforcement Section performed an unannounced full on site targeted inspection. Mr. Grimm entered the following comment in the inspection memo: "No problems found." The facility was found to be in compliance at the time of the inspection and given a Status Code of 30 - In Compliance.

Directions from Charleston, follow US 119S to Route 10 Intersection, proceed toward Man, turn left onto Buffalo Creek Road – proceed toward Lorado – continue Northeast along County Route 16 for approximately 4 miles - after passing preparation plant, turn right onto North Fork of Buffalo Creek.

## ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Fugitive emission calculations for continuous and batch drop operations, transfer points, crushing and screening, storage piles, and paved and unpaved haulroads are based on AP-42 Fifth Edition "Compilation of Air Pollution Emission Factors", Volume 1. Control efficiencies were applied based on "Calculation of Particulate Matter Emission - Coal Preparation Plants and Material Handling Operations." The emission factors for crushing/breaking and screening operations were obtained from the Air Pollution Engineering Manual - Air & Waste Management Association - June 1992. The new facility wide calculations were performed by the applicant using the DAQ's G10-C Excel Emission Calculation Spreadsheet and were checked for accuracy and completeness by the writer. The increase in emissions calculations were performed by the writer using the DAQ's G10-C Excel Emission Calculation Spreadsheet.

The proposed modification will result in an *increase* in the potential to discharge controlled particulate matter emissions of 49.65 pounds per hour (PPH) and 217.47 tons per year (TPY) of particulate matter (PM), of which 14.61 PPH and 64.01 TPY will be particulate matter less than 10 microns in diameter (PM<sub>10</sub>). Refer to the following table for a summary of the proposed change in emissions:

<b>- Change in Emissions - Greenbrier Minerals, LLC Lower War Eagle Facility - G10-D131C</b>	<b>Controlled PM Emissions</b>		<b>Controlled PM<sub>10</sub> Emissions</b>	
	lb/hour	TPY	lb/hour	TPY
<b>Fugitive Emissions</b>				
Open Storage Pile Emissions	0.00	0.00	0.00	0.00
Unpaved Haulroad Emissions	48.19	211.09	13.93	61.01
Paved Haulroad Emissions	0.00	0.00	0.00	0.00
<i>Fugitive Emissions Total</i>	<i>48.19</i>	<i>211.09</i>	<i>13.93</i>	<i>61.01</i>
<b>Point Source Emissions</b>				
Equipment Emissions	1.00	4.38	0.47	2.06
Transfer Point Emissions	0.46	2.00	0.22	0.95
<i>Point Source Emissions Total (PTE)</i>	<i>1.46</i>	<i>6.38</i>	<i>0.69</i>	<i>3.01</i>
<b>FACILITY EMISSIONS TOTAL</b>	<b>49.65</b>	<b>217.47</b>	<b>14.61</b>	<b>64.01</b>

The proposed modification will result in a new estimated potential to discharge controlled emissions for the Lower War Eagle facility. Refer to the following table for a complete summary of the new facility-wide emissions:

<b>- New Emissions Summary - Greenbrier Minerals, LLC Lower War Eagle Facility - G10-D131C</b>	<b>Controlled PM Emissions</b>		<b>Controlled PM<sub>10</sub> Emissions</b>	
	lb/hour	TPY	lb/hour	TPY
<b>Fugitive Emissions</b>				
Open Storage Pile Emissions	0.30	1.32	0.14	0.62
Unpaved Haulroad Emissions	48.19	211.09	13.93	61.01
Paved Haulroad Emissions	4.75	20.82	0.92	4.04
<i>Fugitive Emissions Total</i>	<i>53.25</i>	<i>233.23</i>	<i>14.99</i>	<i>65.67</i>
<b>Point Source Emissions</b>				
Equipment Emissions	1.00	4.38	0.47	2.06
Transfer Point Emissions	3.06	13.39	1.45	6.33
<i>Point Source Emissions Total (PTE)</i>	<i>4.06</i>	<i>17.77</i>	<i>1.92</i>	<i>8.39</i>
<b>FACILITY EMISSIONS TOTAL</b>	<b>57.31</b>	<b>251.00</b>	<b>16.91</b>	<b>74.06</b>

Greenbrier Minerals, LLC's coal handling facility (Lower War Eagle Facility - G10-D131C) and a wet wash coal preparation plant (Saunders Preparation Plant - G10-D103F) meet the definition of "Building, Structure, Facility, or Installation" in 45CSR14.2.10 and "Major Source" in

45CSR30.2.26 and shall be considered as one facility for determining applicability to 45CSR14 (PSD) and 45CSR30 (Title V). Therefore, Greenbrier Minerals, LLC's proposed modifications and their existing operations shall be combined when determining applicability and share the common facility ID Number of 045-00131.

The operations will have a combined estimated potential to discharge controlled emissions of 1,568.81 TPY of PM, of which 482.29 TPY will be PM<sub>10</sub>. The facilities will have a combined estimated potential to emit (point source emissions only) of 171.48 TPY of PM, of which 80.78 TPY will be PM<sub>10</sub>. Refer to the following table for a complete summary of Greenbrier Smokeless Coal Mining, LLC's coal handling facility and wet wash coal preparation plant's combined potential to discharge:

- Facility-wide Emissions Summary - Greenbrier Minerals, LLC Lower War Eagle Facility (G10-D131C) and Saunders Preparation Plant (G10-D103F)	Controlled PM Emissions		Controlled PM <sub>10</sub> Emissions	
	lb/hour	TPY	lb/hour	TPY
<b>Fugitive Emissions</b>				
G10-D131C - Coal Handling Facility	53.25	233.33	14.99	65.67
G10-D103F - Wet Wash Preparation Plant	265.74	1,164.00	76.67	335.84
<b>Fugitive Emissions Total</b>	<i>318.99</i>	<i>1,397.33</i>	<i>91.66</i>	<i>401.51</i>
<b>Point Source Emissions</b>				
G10-D131C - Coal Handling Facility	4.06	17.77	1.92	8.39
G10-D103F - Wet Wash Preparation Plant	44.75	153.71	21.08	72.39
<b>Point Source Emissions Total</b>	<i>48.81</i>	<i>171.48</i>	<i>23.00</i>	<i>80.78</i>
<b>FACILITY EMISSIONS TOTAL</b>	<b>367.80</b>	<b>1,568.81</b>	<b>114.66</b>	<b>482.29</b>

## REGULATORY APPLICABILITY

NESHAPS and PSD have no applicability to the modified facility. The proposed modification of Greenbrier Minerals, LLC's Lower War Eagle Facility coal preparation plant is subject to the following state and federal rules:

*45CSR5 To Prevent and Control Air Pollution from the Operation of Coal Preparation Plants, Coal Handling Operations and Coal Refuse Disposal Areas*

The facility is subject to the requirements of 45CSR5 because it meets the definition of "Coal Preparation Plant" found in subsection 45CSR5.2.4. The facility should be in compliance with Section 3 (less than 20% opacity) and Section 6 (fugitive dust control system and dust control of the premises and access roads) when the particulate matter control methods and devices proposed are in operation.

*45CSR13 Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits, and Procedures for Evaluation*

The proposed modification is subject to the requirements of 45CSR13 because it will result in an increase in emissions greater than six (6) pounds per hour and ten (10) tons per year of a regulated pollutant (PM and PM<sub>10</sub>) and involve the construction of one (1) truck dump bin, one (1) breaker and two (2) belt conveyors, which are defined as affected facilities in 40 CFR 60 Subpart Y. The applicant has submitted an application for a registration to modify. The applicant has submitted an application for a modification registration. The applicant published a Class I legal advertisement in the *Logan Banner* on October 20, 2016 and submitted the \$500 application and \$1,000 NSPS fee.

*45CSR16 Standards of Performance for New Stationary Sources*  
*40 CFR 60 Subpart Y: Standards of Performance for Coal Preparation and Processing Plants*

Greenbrier Minerals, LLC's coal handling facility (Lower War Eagle Facility - G10-D131C) and wet wash coal preparation plant (Saunders Preparation Plant - G10-D103F) are subject to 40 CFR 60 Subpart Y because they were constructed and modified after October 24, 1974 and processes more than 200 tons of coal per day. The proposed modification includes the addition of one (1) truck dump bin, one (1) breaker and two (2) belt conveyors, which are defined as affected facilities in 40 CFR 60 Subpart Y. Therefore, the proposed modification is subject to 45CSR16, which incorporates by reference 40 CFR 60 Subpart Y - Standards of Performance for Coal Preparation Plants. The facility should be in compliance with Section Section 254(b) (less than 10% opacity for coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal which was constructed, re-constructed or modified after April 28, 2008) when the particulate matter control methods and devices proposed are in operation.

The owner or operator of an open storage pile, which includes the equipment used in the loading, unloading, and conveying operations of the affected facility, constructed, reconstructed, or modified after May 27, 2009, must prepare and operate in accordance with a submitted fugitive coal dust emissions control plan that is appropriate for the site conditions. The fugitive coal dust emissions control plan must identify and describe the control measures the owner or operator will use to minimize fugitive coal dust emissions from each open storage pile. The plan must be submitted to the Director prior to startup of the new, reconstructed or modified open storage pile.

*45CSR30 Requirements for Operating Permits*

In accordance with 45CSR30 Major Source Determination, Greenbrier Minerals, LLC's coal handling facility (Lower War Eagle Facility - G10-D131C) and wet wash coal preparation plant (Saunders Preparation Plant - G10-D103F) are not listed in 45CSR30 subsection 2.26.b as one of the categories of stationary sources which must include fugitive emissions (open storage piles constructed or modified on or before May 27, 2009 and haulroads) when

determining whether it is a major stationary source for the purposes of § 302(j) of the Clean Air Act. The facility's combined new potential to emit will be 80.78 TPY for PM<sub>10</sub> (point sources only), which is less than the 45CSR30 threshold of 100 TPY of a regulated air pollutant used to define a major stationary source. Therefore, the coal handling facility and wet wash coal preparation plant will be a nonmajor source subject to 45CSR30. The coal handling facility and wet wash coal preparation plant will not subject to the permitting requirements of 45CSR30 and will be classified as a deferred source.

The proposed modification of Greenbrier Minerals, LLC's Lower War Eagle Facility coal preparation plant is not subject to the following state and federal rules:

*45CSR14 Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration*

In accordance with 45CSR14 Major Source Determination, Greenbrier Minerals, LLC's coal handling facility (Lower War Eagle Facility - G10-D131C) and wet wash coal preparation plant (Saunders Preparation Plant - G10-D103F) are not one of the 100 TPY stationary sources listed under the definition of "Major Stationary Source" in subsection 2.43.a. Therefore, they must have a combined potential to emit 250 TPY or more of any regulated pollutant to meet the definition of a major source in subsection 2.43.b. At the end of subsection 2.4.3, this facility is not listed in Table 1 - Source Categories Which Must Include Fugitive Emissions. So, fugitive emissions (from open storage piles constructed or modified on or before May 27, 2009 and haulroads) are not included when determining major stationary source applicability. The facility's combined potential to emit will be 174.72 TPY for PM (point sources only), which is less than the 45CSR14 threshold of 250 TPY for a regulated air pollutant used to define a major stationary source. Therefore, the proposed modification is not subject to the requirements set forth within 45CSR14.

## TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

A toxicity analysis was not performed because the pollutants being emitted from this facility are PM (particulate matter) and PM<sub>10</sub> (particulate matter less than 10 microns in diameter), which are non-toxic pollutants.

## AIR QUALITY IMPACT ANALYSIS

Air dispersion modeling was not performed due to the size and location of this facility and the extent of the proposed modifications. This facility is located in Wyoming County, WV (right beside the Wyoming/Logan County line), which is currently in attainment for PM (particulate matter) and PM<sub>10</sub> (particulate matter less than 10 microns in diameter). This facility is not a major source as defined by 45CSR14, therefore, an air quality impact analysis is not required.



## MONITORING OF OPERATIONS

The coal processing and conveying equipment and storage areas should be observed to make sure that the facility is meeting the applicable visible emission standards of 40 CFR 60, Subpart Y. Visible emissions from any coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal constructed, re-constructed or modified after April 28, 2008 shall not exceed ten percent (10%) opacity as stated in 40 CFR 60.254(b). Equipment used in the loading, unloading, and conveying operations of open storage piles are not subject to the maximum 10% opacity limitation. 45CSR5. In accordance with Section 3.4, no person shall cause, suffer, allow or permit emission of particulate matter into the open air from any fugitive dust control system which is twenty percent (20%) opacity or greater.

The owner or operator of an open storage pile, which includes the equipment used in the loading, unloading, and conveying operations of the affected facility, constructed, reconstructed, or modified after May 27, 2009, must prepare and operate in accordance with a submitted fugitive coal dust emissions control plan that is appropriate for the site conditions. The fugitive coal dust emissions control plan must identify and describe the control measures the owner or operator will use to minimize fugitive coal dust emissions from each open storage pile. The plan must be submitted to the Director prior to startup of the new, reconstructed or modified open storage pile.

## RECOMMENDATION TO DIRECTOR

The information contained in this permit application indicates that compliance with all applicable regulations should be achieved when all of the proposed particulate matter control methods are in operation. Due to the location, nature of the process, and control methods proposed, adverse impacts on the surrounding area should be minimized. No comments were received during the comment period. Therefore, the granting of a General Permit G10-D registration to Greenbrier Minerals, LLC for the modification of their existing Lower War Eagle Facility located near Cyclone, Wyoming County, WV is hereby recommended.



Daniel P. Roberts, Engineer Trainee  
NSR Permitting Section

November 2, 2016

Date

**EMISSIONS SUMMARY**

Name of applicant: Greenbrier Minerals, LLC  
 Name of plant: Lower War Eagle- D131C  
11/1/16 - Change in Emissions

**Particulate Matter or PM (for 45CSR14 Major Source Determination)**

Uncontrolled PM		Controlled PM	
lb/hr	TPY	lb/hr	TPY

FUGITIVE EMISSIONS				
<i>Stockpile Emissions</i>	0.00	0.00	0.00	0.00
<i>Unpaved Haulroad Emissions</i>	160.65	703.63	48.19	211.09
<i>Paved Haulroad Emissions</i>	0.00	0.00	0.00	0.00
<b>Fugitive Emissions Total</b>	<b>160.65</b>	<b>703.63</b>	<b>48.19</b>	<b>211.09</b>

POINT SOURCE EMISSIONS				
<i>Equipment Emissions</i>	10.00	43.80	1.00	4.38
<i>Transfer Point Emissions</i>	2.54	11.13	0.46	2.00
<b>Point Source Emissions Total*</b>	<b>12.54</b>	<b>54.93</b>	<b>1.46</b>	<b>6.38</b>

\*Note: Point Source Total Controlled PM TPY emissions is used for 45CSR14 Major Source determination (see below)

<b>Facility Emissions Total</b>	<b>173.19</b>	<b>758.57</b>	<b>49.65</b>	<b>217.47</b>
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**\*Facility Potential to Emit (PTE) (Baseline Emissions) = 6.38**  
(Based on Point Source Total controlled PM TPY emissions from above) ENTER ON LINE 26 OF APPLICATION

**Particulate Matter under 10 microns, or PM-10 (for 45CSR30 Major Source Determination)**

Uncontrolled PM-10		Controlled PM-10	
lb/hr	TPY	lb/hr	TPY

FUGITIVE EMISSIONS				
<i>Stockpile Emissions</i>	0.00	0.00	0.00	0.00
<i>Unpaved Haulroad Emissions</i>	46.43	203.35	13.93	61.01
<i>Paved Haulroad Emissions</i>	0.00	0.00	0.00	0.00
<b>Fugitive Emissions Total</b>	<b>46.43</b>	<b>203.35</b>	<b>13.93</b>	<b>61.01</b>

POINT SOURCE EMISSIONS				
<i>Equipment Emissions</i>	4.70	20.59	0.47	2.06
<i>Transfer Point Emissions</i>	1.20	5.27	0.22	0.95
<b>Point Source Emissions Total*</b>	<b>5.90</b>	<b>25.85</b>	<b>0.69</b>	<b>3.01</b>

\*Note: Point Source Total Controlled PM-10 TPY emissions is used for 45CSR30 Major Source determination

<b>Facility Emissions Total</b>	<b>52.33</b>	<b>229.21</b>	<b>14.61</b>	<b>64.01</b>
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Include all information for each emission source and transfer point as listed in the permit application.

**Greenbrier Minerals, LLC**

### Lower War Eagle- D131C

## 11/1/16 - Change in Emissions

**1. CRUSHING AND SCREENING** (including all primary and secondary crushers and screens)

[illegible][illegible][illegible]



[illegible]

**3. WIND EROSION OF STOCKPILES** (including all stockpiles of raw coal, clean coal, coal refuse, etc.)

p =	number of days per year with precipitation >0.01 inch	157
f =	percentage of time that the unobstructed wind speed exceeds 12 mph at the mean pile height	20

[illegible]

**4. UNPAVED HAULROADS** (including all equipment traffic involved in process, haul trucks, endloaders, etc.)

s =	silt content of road surface material (%)	9
p =	number of days per year with precipitation >0.01 inch	157
M <sub>dry</sub> =	surface material moisture content (%) - dry conditions	0.2

[illegible]

**5. INDUSTRIAL PAVED HAULROADS** (including all equipment traffic involved in process, haul trucks, endloaders, etc.)

sL =	road surface silt loading, (g/ft^2)	1
P =	number of days per year with precipitation >0.01 inch	157

Item Number	Description	Mean Vehicle Weight (tons)	Miles per Trip	Maximum Trips Per Hour	Maximum Trips Per Year	Control Device ID Number	Control Efficiency %
1							
2							
3							
4							
5							
6							
7							
8							